

ABSTRACT

There is provided an element mapping unit, scanning transmission electron microscope, and element mapping method that enable to acquire an element mapping image very easily. On the scanning transmission electron microscope, the electron beam transmitted through an object to be analyzed enters into the element mapping unit. The electron beam is analyzed of its energy into spectrum by an electron spectrometer and an electron energy loss spectrum is acquired. Because the acceleration voltage data for each element and window data for 2-window method, 3-window method or contrast tuning method are already stored in a database and accordingly the spectrum measurement is carried out immediately even when an element to be analyzed is changed to another, the operator can confirm a two-dimensional element distribution map immediately. Besides, because every electron beam that enters into an energy filter passes through the object point, aberration strain in the electron spectrometer can be minimized and higher energy stability can be achieved. As a result, drift of the electron energy loss spectrum acquired by analyzing the electron beam into spectrum can be minimized and element distribution with higher accuracy can be acquired.